PRELIMINARY INVESTIGATIONS OF SUBMERGED AREAS

Delivery Order Number 023 Date 10/21/04
Project A N W Refuge

Location ID Number J-8
Coordinates: X 2636673
Y 13233794
Water Depth 2.4
Pipe Length 15 - 13 lbs

Tide Staff Readings:

	Time	Reading
Morning		
Mid-Day		
Evening		

Push No. 1 Time 8:59
Weight of Pipe Penetration (WOP) 3.0 Comment SA CL
One-Hand Push (40-lb) Depth 3.5 Comments

One-Hand Push (70-lb) Depth 3.5 Comments
3.5 to 3.8 SA Layer

Two-Hand Push to Refusal – Depth 5.3 Comments 3.8 to 5.3 SA CL small SA Seam
Jig 6.5 shell + SA

Push No. 2 Time 9:11
Weight of Pipe Penetration (WOP) 3.0 Comment
One-Hand Push (40-lb) Depth 4.2 Comments 30+ CL

One-Hand Push (70-lb) Depth 4.6 Comments SA

Two-Hand Push to Refusal – Depth 4.9 Comments SA + shell @ Bottom
Jig 6.0 shell on Bottom

Hand Proving Ring Penetrometer Test? yes
Hand Vane Shear Test?

Technician (Probe Handler) mike A. Recorder Gary L.

* 4" to 6" Reef Between J-8 and J-9

HAND CONE PENETRATION TEST (CPT)

Delivery Order Number 023 Date 10/21/04
Project A N W Refuge

Location ID Number J-8 Weight of Proving Ring
Time 9:27 Weight of Rod Section 13/65

Weight of Rod Penetration 3.0 Number of Rods 3
Comments

End Depth	Dial	No. Rods	Comment	End Depth	Dial	No. Rods	Comment
3.6	8						
4.6	9		WOR from 3.9 to 4.6				
4.9	60		SACL				
5.0	200		Shell				
5.1	246		Shell				

Comments

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Hand Cone Penetrometer Test and Analysis: RTB 11/8/4

Project: Aransas National Wildlife Ref. - BUS Site "J"
Location: Dunham Bay located outside of Rockport, TX
Delivery Order #: 0023
Date of Testing: 10/20/04 to 10/22/04

Probing Results					
Resistance	Depth1 '	Depth2 '	MLT1'	MLT2'	Average
Weight of Pipe	3	3.0	-0.8	-0.8	-0.8
1 HP (40lbs)	3.5	4.2	-1.3	-2.0	-1.7
1 HP (70lbs)	3.5	4.6	-1.3	-2.4	-1.9
2 Hand Refusal	5.3	4.9	-3.1	-2.7	-2.9

HCPT ID	~ Bay Bottom (MLT in ft)	Water Depth (ft)	# of Rods	Rod End-depth (ft)	Thickness Soil Layer (ft)	Total Unit Wt. of Soil (pcf)	N_k factor	Total Stress (psf)	Dial Reading	Dial Conv. X(lb)	Capacity q_c (psi)	shear str. S_u (psf)	Below Mudline (ft)	~ Elev. MLT in ft
J8	-0.2	2.4	3	3.0	0.6	90	9	54.0	0	0.7	2.7	37	0.6	-0.8
	-0.2	2.4	3	3.6	1.2	95	10	168.0	8	3.2	5.2	58	1.2	-1.4
	-0.2	2.4	3	4.6	1.0	95	10	263.0	9	3.5	5.5	53	2.2	-2.4
	-0.2	2.4	3	4.9	0.3	105	12	294.5	60	19.6	21.5	234	2.5	-2.7
	-0.2	2.4	3	5.0	0.1	110	13	305.5	200	63.6	65.5	702	2.6	-2.8
	-0.2	2.4	3	5.1	0.1	110	13	316.5	246	78.0	80.0	862	2.7	-2.9

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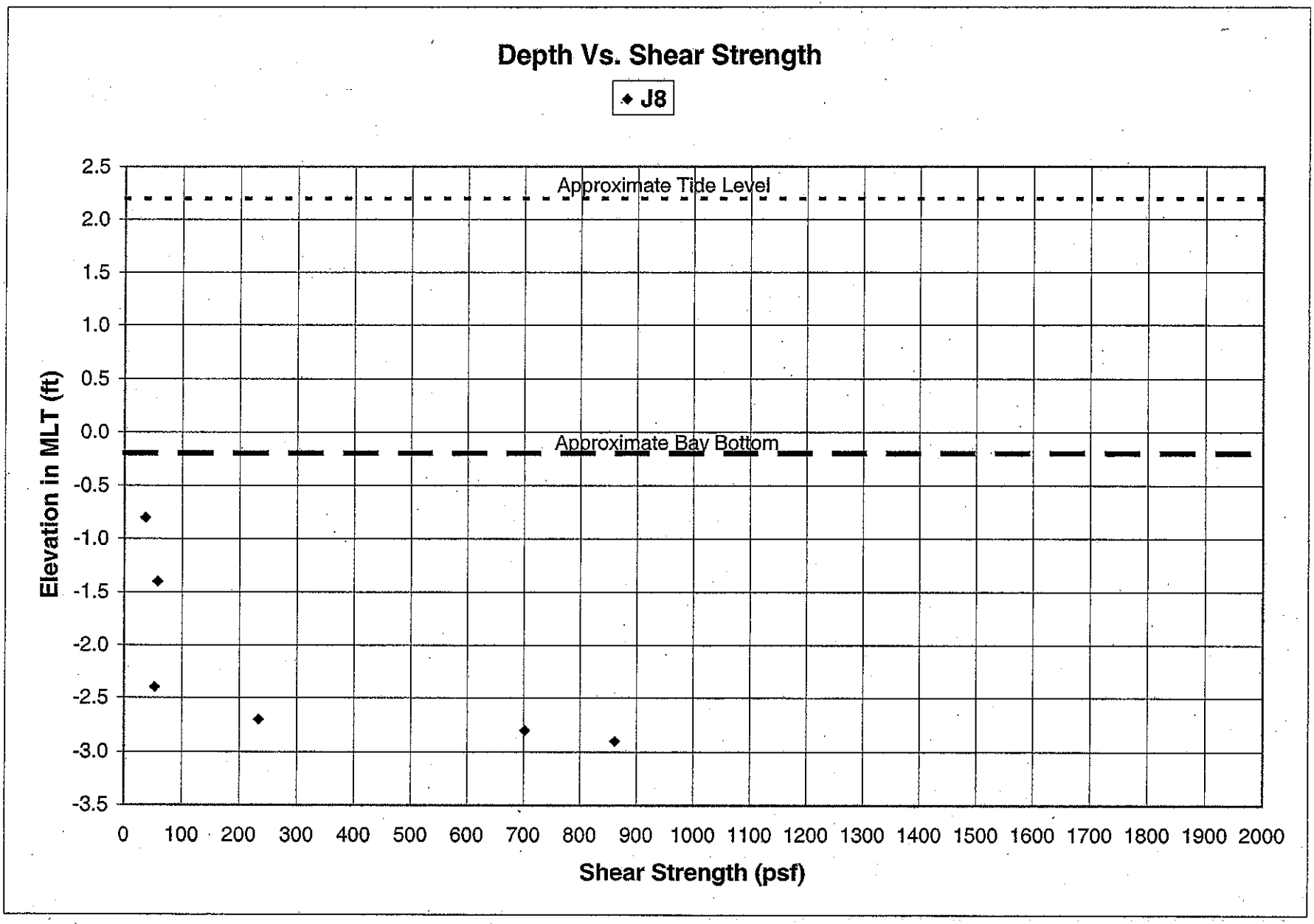
Depth Vs. Shear Strength
J8
Approximate Tide Level
Approximate Bay Bottom
Elevation in MLT (ft)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
Shear Strength (psf)